ORDER NO. AD9204098C2

Service Manual

Speaker System

SB-MX200D

3-Way Speaker System

Colour

(M)...Wood grain Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(M)

The wood grain and colour of each unit is different since natural oak laminate is used.

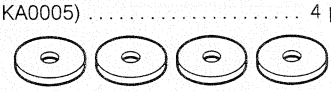
SPECIFICATIONS

Type	3-way, 3-speaker system (bass reflex type)
Speakers	Woofer 27 cm cone type
	(Mica compound lacquer coated diaphragm)
	Squawker (mid range) 6 cm dome type
	(Pure mica lacquer coated diaphragm)
	Tweeter 2.5 cm dome type
	(Pure mica diamond coated diaphragm)
Cabinet	Oak laminate with glossy paint finish
	(Painted five times: Two coats of polyester, one color coat, and two coats of polyurethane)
Allowable input	250 W (MUSIC), 125 W (DIN)
Output sound pressure level	88 dB/W/m
Impedance	4Ω
Crossover frequencies	450 Hz, 4 kHz
Frequency response	23 Hz–45 kHz (−16 dB)
Dimensions (W×H×D)	344×903×423 mm (including net)
	320×840×391 mm (cabinet)
Weight	47 kg

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

ACCESSORIES

• Speaker feet
(RKA0005) ..... 4 pcs.



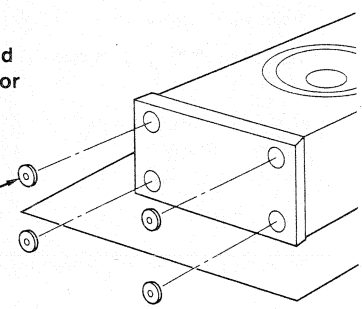
ATTACHING SPEAKER FEET

Attach the supplied speaker feet if the floor is bumpy or if the floor may be scratched or howling may occur, etc.

The bottom of the speaker system is made of anti-vibration rubber which consists of a compound iso-propylene rubber-based material. You can obtain a good acoustic effect without installing the speaker feet.

1. **Face the back down and place it on a soft cloth or something similar.**
2. **Bond the speaker feet provided, as shown in the figure.**

Speaker feet
(RKA0005 × 4, included)



Technics

■ CONNECTING WITH THE AMPLIFIER

- **Use an amplifier which can be connected 4Ω impedance speaker.**
- **Always turn off the amplifier power switch before connecting to the speakers.**
- **Connect the left and right channels to the correct pole (+, −). When the poles are not aligned, there will be a noticeable loss in the senses of direction, orientation, and broadness.**

This speaker system does not come with speaker cords. This is because it is recommended that you select speaker cords that match your audio equipment or otherwise meet your requirements. Refer to "Speaker cords" below, and purchase suitable speaker cords.

■ Speaker cords (not included)

You should use LC-OFC type cord that has a conductor cross-sectional area of at least 1.25 mm².
Do not use fine cords or cords that are not suitable for use as speaker cords. Selection of the wrong kind of cord may prevent you from obtaining sufficient output or may cause the sound quality to be degraded.

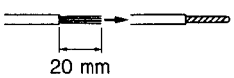
■ Connecting the speaker cords

To connect this speaker system with the amplifier, either single-wiring or bi-wiring connection is possible.
Remove the shorting leads from the ⊕ (plus) and ⊖ (minus) sides when making bi-wiring connection.

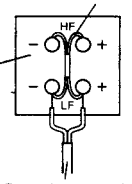
Single wiring connection

Bi-wiring should be used in order for the capabilities of the system to be adequately displayed. However, when connecting with single wiring, please follow the figure below:

Strip the wire to a point 20 mm from the end, and twist the wire end to a point.



Shorting leads [The red wire is inserted in the ⊕ (plus) side]



Speaker cords

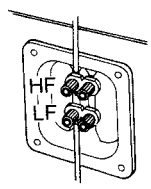
Ensure that the polarity of each shorting lead is the same as the polarity of each speaker cord. Insert the two cords from the bottom of the "LF" terminals, then screw them tight. Next, connect the shorting leads to the "HF" terminals and screw them tight.

Bi-wiring connection

① Twist the strands.

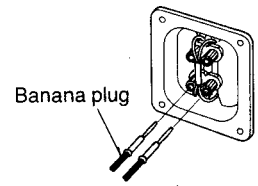
② Loosen by turning to the left 5 or 6 times.

③ Insert the cord and tighten up properly.



Insert into "HF" from above and into "LF" from below.

When using a banana plug



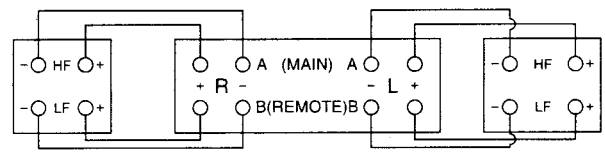
Note:
Use with speaker terminal knob tightened completely.

■ Bi-wiring connection

Slacken the terminals, remove the shorting leads from the ⊕ (plus) and ⊖ (minus) sides, then connect the speaker cords.

When the speaker terminal is a two or more system amplifier (Bi-wiring)

Connect the high frequency terminal (HF) to the amplifier "A" (main) terminal, and the low frequency terminal (LF) to the "B" (remote) terminal.

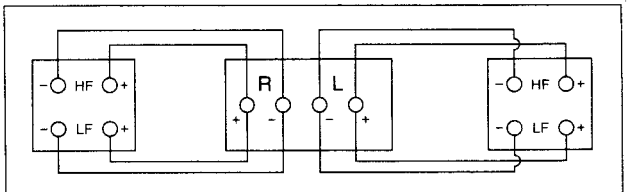


This unit (right) Amplifier Speaker Terminal This unit (Left)

Note:
Set the speaker select switch to the "A (main)" + "B (remote)" position.

When the speaker terminal is a one system amplifier

Connect to the amplifier speaker terminals with both speaker cords connected to the same pole.

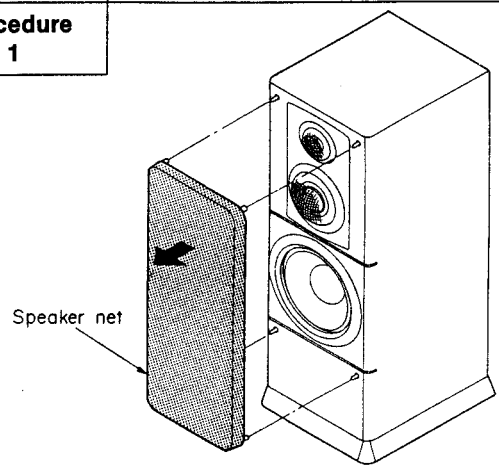


This unit (right) Amplifier Speaker Terminal This unit (Left)

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the speaker net

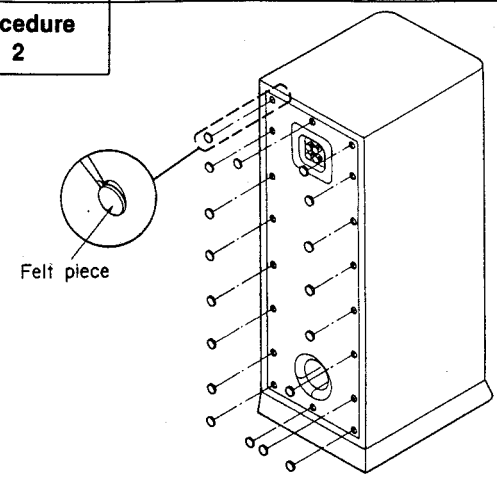
Procedure 1



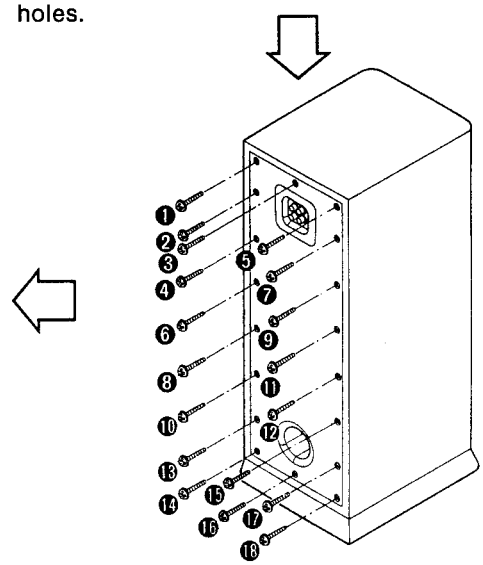
1. Remove the speaker net in the direction of arrow.

Ref. No. 2	Removal of the rear board

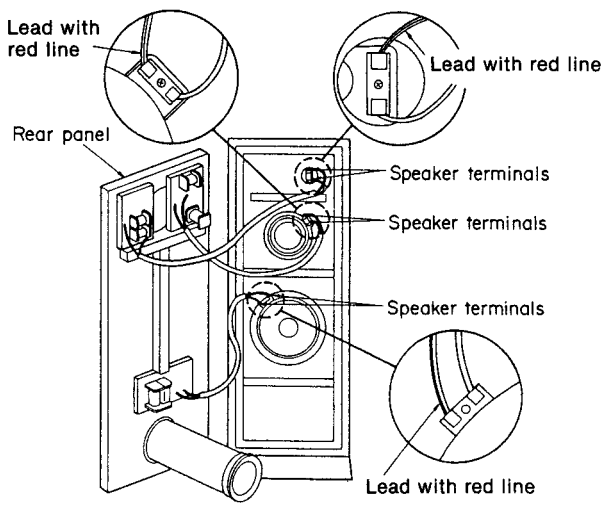
Procedure 2



1. Remove the 18 felt pieces used to cover the screw holes.



2. Remove the 18 screws (❶~⑱).



3. Pull out the speaker terminals.

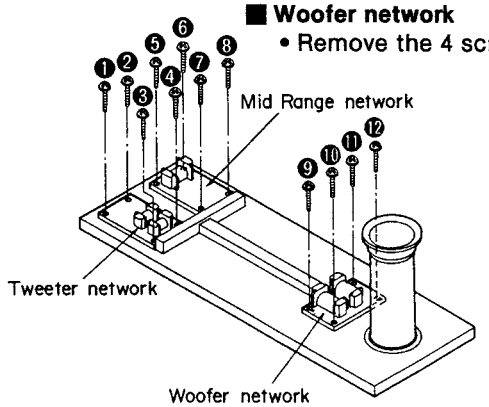
Ref. No. 3	Removal of the networks (Tweeter, Mid Range, Woofer)

Procedure 2→3

■ **Tweeter network**
- Remove the 4 screws (❶~❹).

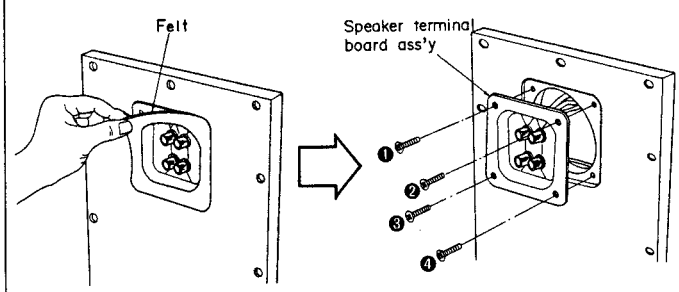
■ **Mid Range network**
- Remove the 4 screws (❺~❽).

■ **Woofer network**
- Remove the 4 screws (❾~⑫).



Ref. No. 4	Removal of the speaker terminal board ass'y

Procedure 4



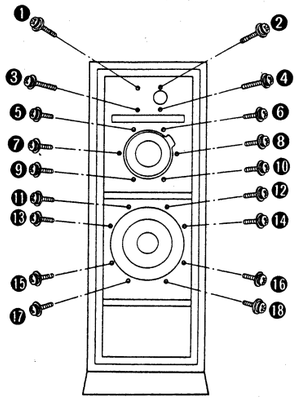
1. Remove the 1 felt.
2. Remove the 4 screws (❶~❹).

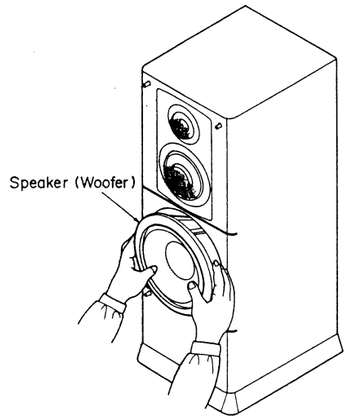
Ref. No. 5	Removal of the speakers (Tweeter, Mid Range, Woofer)
Procedure 1→2→5	

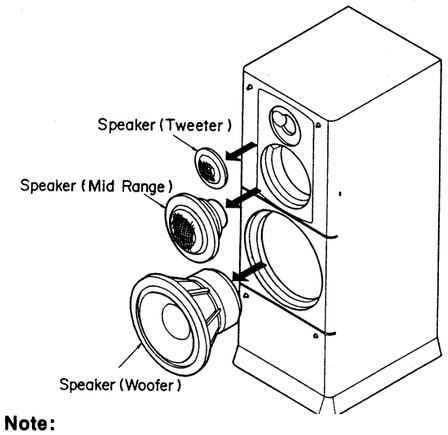
■ Speaker (tweeter)
1. Remove the 4 screws (❶~❹).
2. Push the speaker (tweeter) from the inside of the main unit and then remove it.

■ Speaker (mid range)
1. Remove the 6 screws (❺~❿).
2. Push the speaker (mid range) from the inside of the main unit and then remove it.

■ Speaker (woofer)
1. Remove the 8 screws (⓫~⓲).
2. Push the speaker (woofer) from the inside of the main unit and then remove it.







Note:
- Remove the woofer by holding it tightly with both hands as it is very heavy (7.5kg).

Note:
- It may occasionally be difficult to remove the speakers as they are airtight-sealed with felts to prevent air leaks and to ensure good sound quality. It this occurs, push them harder from the inside of the main unit to remove.

■ REPLACEMENT

For better aural effect, please follow the instructions below when locating your system.

■ Place it on a level, solid and strong floor.

■ Put the back along a wide, solid wall.

Note:
This unit uses a rear bass reflex method so keep it about 5 cm from the wall.

■ Keep away from record player.

If a record player is placed near the speaker, vibrations will be transmitted to the cabinet of the record player, causing howling. In such a case, effective measures are keeping the record player away from the speaker, or gluing the supplied speaker feet on the bottom of the unit, or putting cushioning material (felt, etc.) under the record player.

This unit weighs 47 kg so be very careful when handling it.

■ Hang thick curtains against the surface facing the speakers.

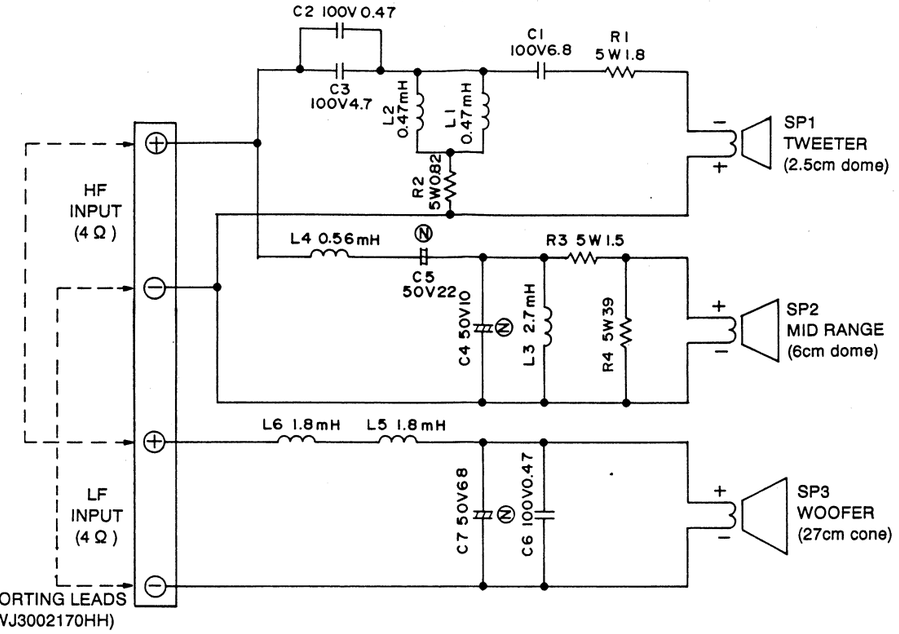
This will prevent sound reflection and sympathetic vibration, if the speakers face a solid wall or glass door across the room.

■ Increase the distance between the speaker systems and TV set if interference should affect the colors on the TV screen.

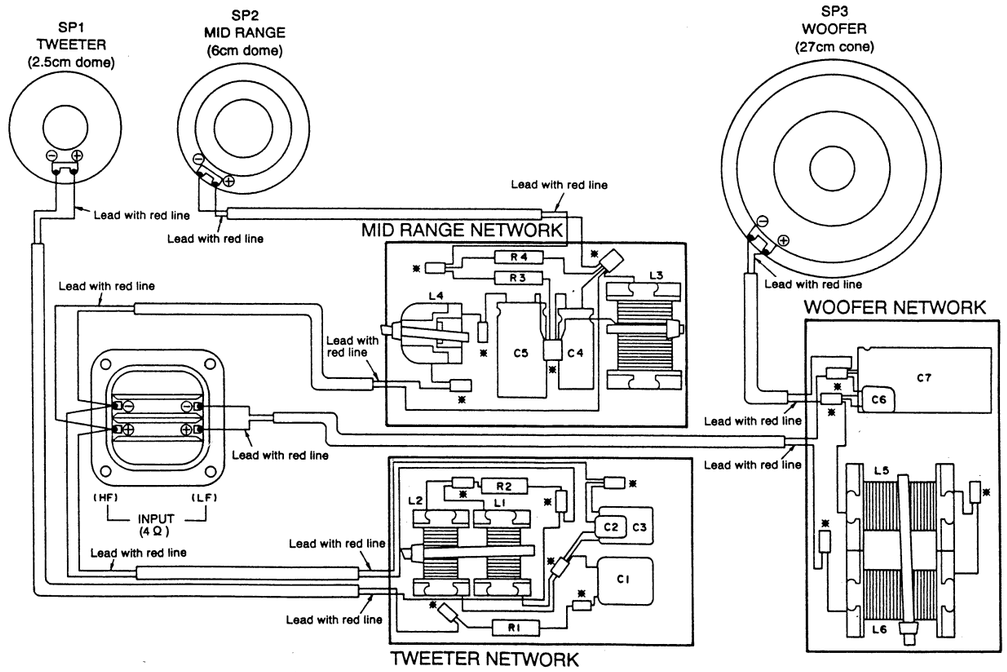
These speaker systems are designed so that they will not readily generate the kind of magnetic fields which will disturb and distort the colors reproduced on a TV screen. However, depending on the kind of TV set used, problems may appear with the colors. In cases like this, switch off the power of the TV set and then wait between 15 and 30 minutes before switching it back on again. The problem should now be solved by the self-demagnetizing function of the TV set. If it persists, place the speaker systems at a greater distance from the TV set.
Exercise caution over the installation of any object capable of generating magnetic fields near the TV set and speaker systems since the colors on the TV screen may be disturbed due to resulting.

■ SCHEMATIC DIAGRAM (Parts list on page 6.)

(This schematic diagram may be modified at any time with development of new technology.)



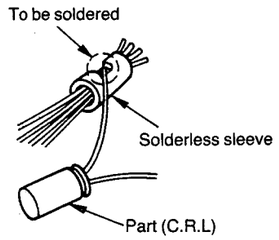
■ WIRING CONNECTION DIAGRAM



Notes:
- An asterisk (※) indicates a section connected with solderless sleeve.
- The speakers in the diagram are shown from the terminal side.

NOTES FOR REPLACING PARTS

Though the parts in the networks are connected with solderless sleeves, soldering the solderless sleeves is necessary when the capacitor resistor coils (C.R.L) are replaced. (Use a soldering iron of approx. 60 W)



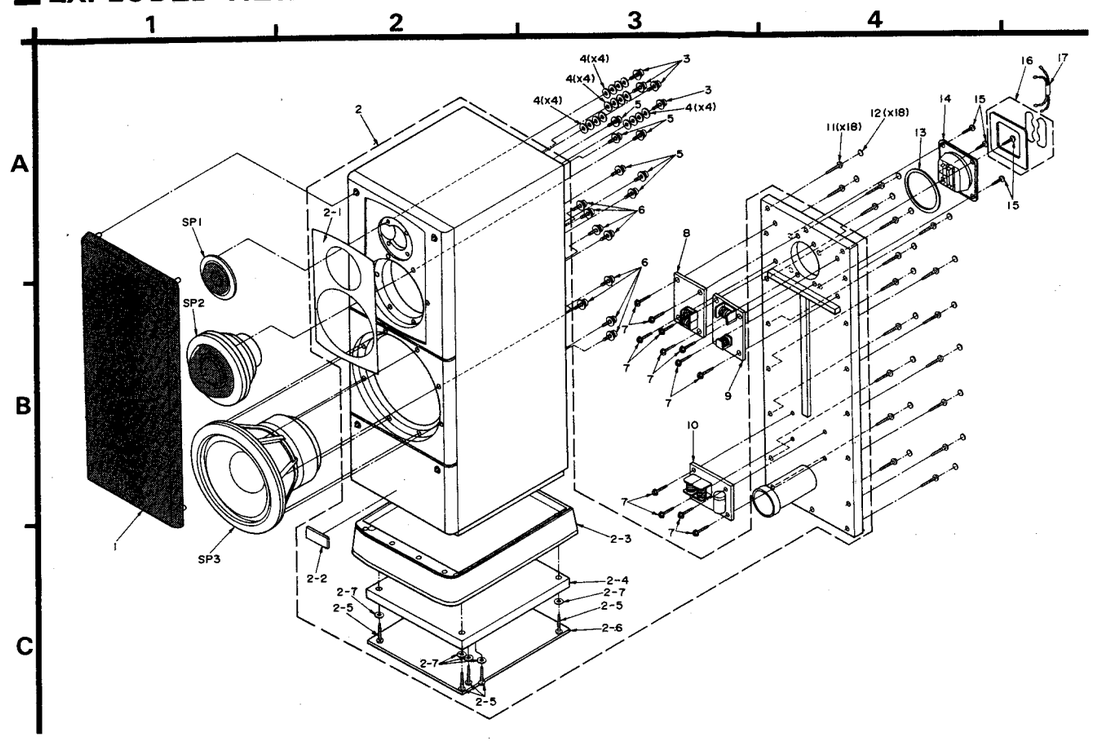
■ REPLACEMENT PARTS LIST

Note: Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.

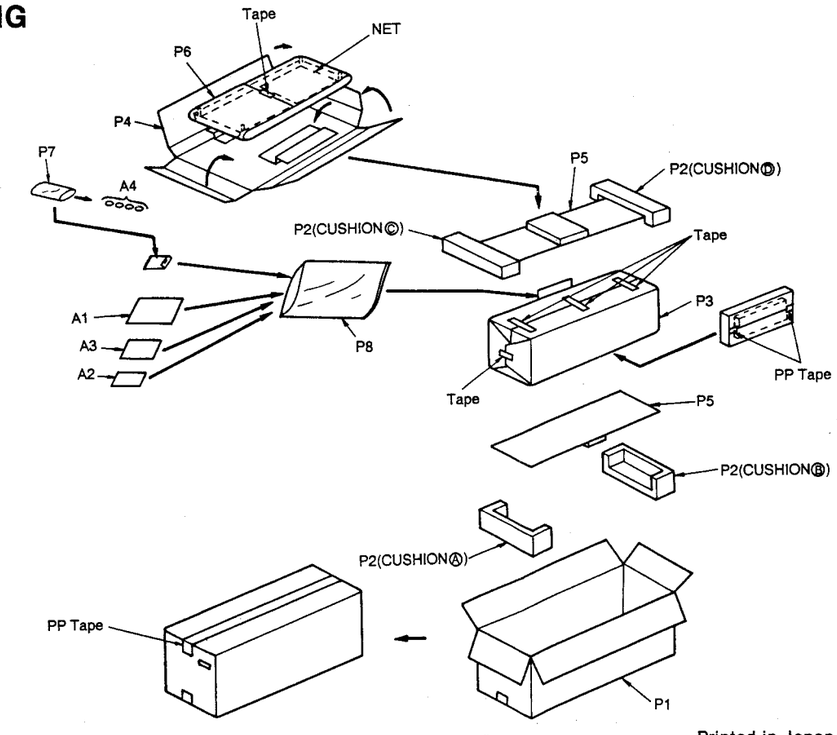
Ref. No.	Part No.	Part Name & Description	Remarks
		SPEAKERS	
SP1	RFKAMX200DAM	TWEETER ASS'Y: 2.5cm DOME	
SP2	RFKAMX200DBM	MID RANGE ASS'Y: 6cm DOME	
SP3	RFKAMX200DCM	WOOFER ASS'Y: 27cm CONE	
		TWEETER NETWORK	
R1	ERX5SJ1R8	M. RESISTOR, 5W, 1.8Ω	
R2	ERX5SJR82	M. RESISTOR, 5W, 0.82Ω	
C1	RCQE1685KG-Q	F. CAPACITOR, 100V, 6.8uF	
C2	RCQE1474KG-Q	F. CAPACITOR, 100V, 0.47uF	
C3	RCQE1475KG-Q	F. CAPACITOR, 100V, 4.7uF	
L1, 2	RLCU471J-E	CHOKE COIL, 0.47mH	
		MID RANGE NETWORK	
R3	ERX5SJ1R5	M. RESISTOR, 5W, 1.5Ω	
R4	ERG5SJ390	M. RESISTOR, 5W, 39Ω	
C4	QCEA50Y10L	E. CAPACITOR, 50V, 10uF	
C5	QCEA50Y22L	E. CAPACITOR, 50V, 22uF	
L3	RLCU272J-E	CHOKE COIL, 2.7mH	
L4	RLCU561J-E	CHOKE COIL, 0.56mH	
		WOOFER NETWORK	
C6	RCQE1474KG-Q	F. CAPACITOR, 100V, 0.47uF	
C7	QCEA50Y68L	E. CAPACITOR, 50V, 68uF	
L5, 6	RLCU182J-E	CHOKE COIL, 1.8mH	
		CABINET AND CHASSIS	
1	RYB0044	NET	
2	RFKKMX200DEM	CABINET ASS'Y	
2-1	RMF0016-1	FELT	
2-2	RGB0053	BADGE	
2-3	RMG0258-T	RUBBER BOARD	

Ref. No.	Part No.	Part Name & Description	Remarks
2-4	RKQ0107-X	PLATE, RUBBER BOARD	
2-5	XMM38+45	SCREW (RUBBER BOARD, PLATE)	
2-6	RMG0266-T	RUBBER SHEET	
2-7	XWG5	WASHER (RUBBER BOARD, PLATE)	
3	XYN5+F40S	SCREW (TWEETER ASS'Y)	
4	XWG5	WASHER (TWEETER ASS'Y)	
5	XYN5+F30S	SCREW (MID RANGE ASS'Y)	
6	XYN6+F30S	SCREW (WOOFER ASS'Y)	
7	XMA31+D25	SCREW (NETWORKS)	
8	REJ0024-C	TWEETER NETWORK ASS'Y	
9	REJ0024-B	MID RANGE NETWORK ASS'Y	
10	REJ0024-A	WOOFER NETWORK ASS'Y	
11	XTW4+35A	SCREW (REAR BOARD)	
12	RMF0022-1	FELT	
13	SHRS9076	PACKING, TERMINAL BOARD	
14	RFKNMX200D-M	TERMINAL BOARD ASS'Y	
15	XMS31+D20FZ	SCREW (TERMINAL BOARD)	
16	RMF0113	FELT	
17	RWJ3002170HH	SHORTING READS	
		PACKING MATERIAL	
P1	RPG1300	PACKING CASE	
P2	RPN0594	CUSHION	
P3	RPH0109	PROTECTION SHEET (UNIT)	
P4	RPQ0230	PAD (NET)	
P5	RPQ0231	PAD	
P6	SPHS4X150A03	PROTECTION SHEET (NET)	
P7	XZB06X10C03	PROTECTION BAG (SP. FEET)	
P8	SPB1061	PROTECTION BAG (F. B.)	
		ACCESSORIES	
A1	RQT1585-E	INSTRUCTION MANUAL	
A2	RQA0013	WARRANTY CARD	
A3	RQCB0169	SERVICENTER LIST	
A4	RKA0005	SPEAKER FEET	

■ EXPLODED VIEW



■ PACKAGING



<CUSHIONⒶ,Ⓑ,Ⓒ,ⓓPart No. : RPN0594>

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